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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/720,557

12/21/2000

Stefan Schroder

P001884

2517

7590

09/09/2004

Schiff Hardin & Waite
6600 Sears Tower
233 South Wacker Drive
Chicago, IL 60606

EXAMINER

PHAN, MAN U

ART UNIT

PAPER NUMBER

2665

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/720,557

Applicant(s)

SCHRODER, STEFAN

Examiner

Man Phan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The application of Schroder for a "Methods for optimizing the available transmission capacity at subscriber line networks" filed 12/21/2000 has been examined. This application is a 371 of PCT/EP99/00815 filed 02/08/1999. . This application claims foreign priority based on the application 98 112 144.5 dated 06/30/1998 filed in Germany. The preliminary amendment filed 12/21/2000 have been entered and made of record. Claims 1-6 are pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Timm et al. (US#6,055,268) in view of Cioffi et al. (US#6,473,438).

With respect to claim 1, both Timm et al. (US#6,055,268) and Cioffi et al. (US#6,473,438) disclose a novel method and system for multimode digital modems for use in xDSL, according to the essential features of the claims. Timm discloses in Figs. 2a,d block

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diagrams illustrated the central office modems and distribution system, in which the information is transmitted to the subscribers via a subscriber connection network (Col. 11; lines 24 plus) composed of xDSL subscriber connection lines with modem units at both ends of each connection line (Col. 1; lines 58 plus) and of control logics for the regulation of the subscriber connection network. The system includes a control channel that extends from one of the modems to the control logics (Col. 11; lines 48 plus) and through which information regarding the bandwidth available on the associated subscriber connection line is transmitted (Col. 11; lines 53 plus; Col. 14; lines 15 plus and Col. 26, lines 13 plus). Timm's present invention provides a programmable Digital Signal Processor (DSP) implementation approach that allows different existing ADSL line codes, Discrete Multitone (DMT) and Carrierless AM/PM (CAP), to be implemented on the same hardware platform as a voice-band modem. With a DSP implementation, the desired transmission rate can also be negotiated in real time to accommodate line condition and service-cost requirements. This line code and rate negotiation process can be implemented at the beginning of each communication session through the exchange of tones between modems at both ends. A four-step Mid-band Digital Subscriber Lines (MDSL) modem initialization process is used for line code and rate compatibility (Col. 5; lines 26 plus).

However, Timm does not disclose expressly the step of providing at least one communication channel between a modem unit and the control logic, information with respect to bandwidth present on an allocated subscriber line being conducted thereover. In the same field of endeavor, Cioffi et al. (US#6,473,438) teaches in Fig. 1 a schematic transmission scheme for a typical multiuser subscriber network, in which a bi-directional data transmission system that facilitates communications between a plurality of remote units and a central unit using a frame

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based discrete multi-carrier transmission scheme that has a multiplicity of discrete sub-channels provided for facilitating upstream communications between the plurality of remote units and the central unit, a method of dynamically checking sub-carrier transmission quality from the remote units to the central unit to facilitate the allocation of bandwidth to the remote units by the central unit (Col. 1, lines 49 plus). Cioffi further discloses a method of dynamically checking sub-carrier transmission quality from the remote units to the central unit is described. This facilitates the allocation of bandwidth to the remote units by the central unit. In this embodiment, training signals are transmitted from one of the remote units over the multiplicity of sub-channels provided for facilitating upstream communications during a selected synchronized quiet time. The training signals are monitored by the central unit which determines a set of channel characteristics indicative of the bit capacities of the various sub-channels to deliver signals from the selected remote. The central unit may then use the set of channel characteristics when determining which sub-channels to allocate to the selected remote unit for upstream communications (See Figs. 11a,b,c; Col. 4; lines 20 plus).

Regarding claim 2, Timm discloses in Fig. 2a the arrangement in a subscriber connection network, in which the DSL modem 100 communicate with another modem 100 in the switch room 220.

Regarding claim 3, Timm provides the modem units at the subscriber end (Col. 1; lines 58 plus).

Regarding claim 4, Timm discloses in Figs. 10a-h illustrated the line connection management, in which information exchange occurs periodically, not as a result of being

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triggered (for example by changes in channel configuration or by the measurement of channel-relevant parameters). This minor modification, however, is straightforward for a person skilled in the art, especially since the “polling” of states instead of “triggering” when a particular state occurs is an alternative known from practically all documents regarding measurement technology and basic manuals on information technology or process control.

Regarding claims 5, 6, Timm further teaches the information is exchanged on demand (Col. 14; lines 19 plus; Col. 18, line 65 plus; Col. 21, lines 31 plus).

One skilled in the art would have recognized the need for effectively and efficiently optimizing the available transmission capacity in subscriber line network utilizing the exchanged information, and would have applied Cioffi's teaching of the coordinating upstream communications from the remote units into Timm's novel use of the modem which supports both voice band and above voice band (DSL) functionality. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Cioffi's method and apparatus for coordinating multi-point to-point communications in a multi-tone data transmission system into Timm's multimode digital modem with the motivation being to provide a method and system for providing a communication channel between modem and a central control logic in subscriber line networks, and allows information exchanged according to an xDSL transmission.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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The Polley et al. (US#5,999,563) is cited to show the rate negotiation for variable rate³ digital subscriber line signaling.

The Bingham (US#5,557,612) is cited to show the method and apparatus for establishing communication in a multi-tone data transmission system.

The Pickett (US#6,744,758) is cited to show the systems and methods for multiple mode voice and data communications using intelligently bridged TDM and packet buses.

The Zuranski et al. (US#6,430,219) is cited to show the method of and apparatus for performing line characterization in a subscriber line communication system.

The Wang (US#6,542,465) is cited to show the method for flow control in ADSL devices

The Tzannes (US#6,647,068) is cited to show the variable state length initialization.

The Esliger et al. (US#6,700,927) is cited to show the method for establishing and adapting communication link parameters in xDSL transmission systems.

The Palm (US#6,735,245) is cited to show the activation of multiple xDSL: modems with channel probe.

The Bhagavath et al. (US#6,374,288) is cited to show the DSL server system and method for dynamically changing bit rates in response to user requests and to message types

The Wahl (US#2003/0231656 A1) is cited to show the method, medium access controller, control module, terminating device and terminating module for allocating transmission capacity of a shared medium in a multipoint-to-point network.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (571) 272-3149.

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The examiner can normally be reached on Mon - Fri from 6:30 to 3:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

6. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

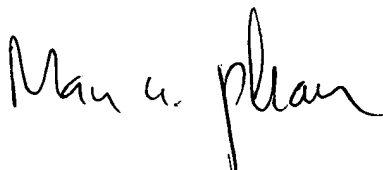
or faxed to: (703) 305-9051, (for formal communications intended for entry)

Or: (703) 305-3988 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive,
Arlington, VA., Sixth Floor (Receptionist).

Mphan

09/07/2004.



MAN U. PHAN
PRIMARY EXAMINER